

MANAS

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FRONTS OF SCIENCE

IN the abstract, Science is the pursuit of knowledge. An important scientific fact is a fact which adds to the general understanding of the laws of nature, and most of the histories of science chronicle the march of discovery from this point of view. It is possible, however, to have a close familiarity with this sort of development in scientific inquiry and still remain unaware of a vast area of influence of science upon society.

A new scientific "fact," for example, begins as a discovery of some individual investigator or group. The fact is then adopted by technology and becomes a link in various manufacturing processes. If technology is very much advanced by the use of this fact, the formerly quite innocent bit of knowledge will in time become an instrument of power—economic, political, and military power. This translation of science into technology into power is nothing new, of course, but becomes especially notable today for the reason that the intermediate stages between the initial discovery and its use as power have been virtually abolished in many fields of research, which has the effect of drawing scientists into politics and political and military administration. The pure and shining truth of today's research is tomorrow's improvement on a guided missile, or a new biological poison.

What about the old ideal of the scientific search for knowledge for its own sake? Still theoretically sound, it doesn't seem to mean much, practically, any more. Physics is not the only field where this appears to be the case. For years, the larger advertising agencies have had the counsel of trained psychologists. The vulnerable points in the consumer's armor of "sales resistance" are discovered by studious experiments and research. The law of the conditioned reflex was not long left an "academic" fact, but was put to work in the dinging repetition of slogans and brand-names associated with objects pleasant to the senses. Personnel management, labor relations, publicity and other correlations of industrial and merchandising enterprise have long benefited from psychological and psychiatric research. Wherever, in fact, there is a problem of manipulation, whether of matter or mind, science assists. It will hire out to anybody, and in this it is no better, or no worse, than any other purchasable skill. Science, in the twentieth cen-

tury, is often no more than simply rationalized power.

There is another sequence of effects from scientific discovery, proceeding at another level of human experience. This is its impact upon the world of ideas and ideals—upon what men think is "real," what is worth striving for, and capable of achievement, in human life. As science has been affecting thought in this manner ever since the seventeenth century, historians of ideas such as Alfred North Whitehead and E. A. Burtt have described the process rather thoroughly. It began with Galileo's division of "reality" into the gross attributes and motions of matter, which he named "primary," and the subtler and less easily measurable perceptions of the senses, which he relegated to the class of "secondary" qualities. This division of natural phenomena was very flattering to physics, and conveniently set aside a vast area of experience insusceptible to physical methods of research as somehow "unreal." Next came Descartes' separation of man into body and soul—unrelated matter and mind—a partition which would have added no novelty to the theological division except for the fact that Descartes assigned all the dynamic functions of human behavior to the body, devising a mechanistic theory to explain them, and leaving the soul only a nominal reality. There was not enough to Descartes' idea of the soul for it even to be "saved." Scientific thinkers admiring the Cartesian approach could easily drop the soul entirely from their speculations—as easily as astronomers could overlook the more or less functionless Divine Overseer of the cosmic process postulated in his scientific works by Isaac Newton.

Then, in the eighteenth century, Lamettrie assembled the testimony of biology to show that Nature herself contained ample potencies for the elaboration of forms—needing no external "Creator" to produce the species. A century more passed, and the last stronghold of theology gave way to the battering blows of Darwin, Huxley and Haeckel. It had been Lamettrie's purpose to use science to elevate the animals to something more than creatures molded by a designing God from senseless clay; but the evolutionists of the nineteenth century reversed this tendency, degrading man to the level of the brute. It was not that they disliked and wished to derogate human beings, but that to claim an identity be-

tween man and animal seemed to them a powerful weapon to use in the war against theology. Materialism, as Bertrand Russell once said, is "a system of dogma set up to combat orthodox dogma." It was established, he pointed out, not "by men who loved dogma, but by men who felt that nothing less definite would enable them to fight the dogmas they disliked."

About fifty or sixty years after the initial campaign of the Darwinists, two other allegedly "scientific" doctrines completed the ideological development of scientific materialism—the Freudian interpretation of the emotions and the Behavioristic theory of human conduct. In the latter theory, even consciousness itself was denied any real existence. With the widely popular teachings of John B. Watson, the logic of Descartes' mechanical explanation of man was carried to completion.

Meanwhile, the identification of the "real" with the physical proceeded to penetrate every branch of human thought. Space is lacking to trace the numerous ramifications of this tendency. Medicine, of course, soon adopted the materialistic dogma, as submitting to the uses of professional orthodoxy with much more docility than any philosophy of moral idealism involving the existence of the soul.

But somewhere during the past twenty years, scientific materialism hit bottom and started bouncing. Perhaps the discoveries in physics at the turn of the century had something to do with the change in the scientific temper. The electron theory of matter, after all, while making no clear threat to the mechanistic explanation of human behavior, was nevertheless a serious blow to the materialistic *mystique*. The tiny billiard-ball atom—the "ultimate" particle of matter—was no more. It had become a flow of energy, a moving field, a sub-microscopic galaxy, dissolving, for the physicist, into a series of complex equations. This all too solid earth was now a crude illusion, according to the scientists themselves. And while matter was losing the firm reality of the cobblestone kicked by Dr. Johnston, Dr. Einstein stole away the hitching posts in the universe around us and set the world asea in an ocean of relativity. In this manner, the symbolic securities of materialism were destroyed.

Dr. Carrel struck the first blow against materialism in medicine, with his *Man the Unknown*, a profoundly influential book. Then, a few years later, came the rise of psychosomatic medicine. After a century of tearing man apart, and treating him like some sort of biological machine, human subtleties were once again admitted to play a part in health and disease. Psychologists began to interest themselves in the behavior of "wholes" instead of merely parts of organic and psychic function. The ghost of a divine purpose crept back into the cosmic scheme with the several theories of Emergent Evolution. Dr. William McDougall stopped thinking secretly about the importance of psychic research, left Harvard and went to Duke, found Dr. Rhine, and inaugurated the now famous series of experiments in ESP.

Concurrently, the epoch of miracle drugs and treatments began. First came vitamins, then hormones, fol-

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Letter from

FRANCE

A COLLEGE TOWN.—The ups and downs of the cold war, the Indo-Chinese fight for independence, and the Atlantic Pact have been sharing the limelight with the Kravchenko trial, which has become a sort of news serial story. The Communist periodical, *Les Lettres Françaises*, is being sued for libel by the author of *I Chose Freedom* for their published accusation that the book is in reality a product of American propaganda, signed but not written by Kravchenko. The ensuing debate has become a sounding-board for personal opinions for and against the Stalinist regime. Frequently the discussion has gone far from the question to be decided.

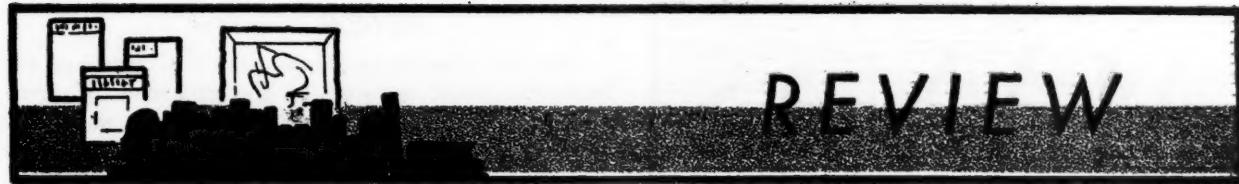
On a subject upon which the majority of people have strong opinions it naturally becomes difficult, if not impossible, to draw the line between the objective and the subjective. Rather than risk elimination of pertinent material, the French system lets everyone have his say.

The defamatory nature of the article precipitating the trial has again brought up the question of what constitutes free speech. Some say that if stricter anti-defamation rules had been applied to the press, the Kravchenko case would never have occurred. Now that the trial is going on, the London *Picture Post* has posed the question of why, contrary to French laws, the trial has been given such great publicity in the press. (The editor of the London *Daily Mirror* was recently sentenced to a prison term for publishing a story about an accused man whose trial had not yet begun.) The French press, being largely partisan, has of course taken strong sides in the Kravchenko case. As far as public reactions are concerned, it has been of little use for the Court to constantly remind the litigants that the Soviet regime is not on trial.

On the other hand, a stricter censorship would have hampered what has been considered by some the greatest advantage of the trial. Out of the hours of talk can be discerned a vivid demonstration of some of the sickness of our contemporary world. We can see to what tremendous extent mistrust, brutality, dishonesty, credulity and insincerity are present in men. One is reminded of previous court trials, likewise involving more than the persons directly concerned, like that of Emile Zola and his little book *J'accuse*; of the Sacco-Vanzetti case in the United States.

Today, France is more and more being forced to take sides in the East-West battle for power. Kravchenko himself has an axe to grind in this respect; when asked why he came to France, instead of having the trial in Washington, he replied that the French Communist Party was much larger and more influential, and that it was therefore important to deal with it. So the case becomes, more or less admittedly, another incident in the so-called "cold war."

So, whether or not the press was acting within its legal rights, it certainly has given the public the details



"AMERICANISM" LITERATURE

BOOKS and pamphlets on the subject of Americanism are usually ignored by sophisticated readers as not worth looking at, or accepted with an uncritical enthusiasm simply because of their choice of subject matter and title. This seems a mistake, on both counts. The one point of view assumes that America, or rather the United States, has no distinctive contribution to make to world civilization, while the other assumes that America's contribution is of such unique value and excellence as to be beyond criticism.

About the best book we know of on Americanism is Rose Wilder Lane's *The Discovery of Freedom* (John Day, 1943). It seems to have been written at white heat about a single great idea—the idea of freedom. Like all good books which are in some sense historical, this one is really about a philosophical principle—the idea of freedom as a "natural right"—and Mrs. Lane finds in the American Republic a conscious recognition, on the part of the Founding Fathers, at least, of the revolutionary meaning of that natural right. A key passage in her book deals with the Constitution of the United States, as a "third attempt" of Western civilization to attain to a workable form of political freedom. (The first two attempts, according to Mrs. Lane, were the work of Abraham and Mohammed.) Americans, she writes, although grudgingly and suspiciously, at last accepted the new kind of constitutional government—

But only on condition that every Constitution, while it granted certain limited permissions to men in Government, also definitely prohibited their using force as Governments always had used force.

These prohibitions are called the Bill of Rights.

The name is not a good one, because it is not accurate. It confuses a careless mind.

The name, "Bill of Rights," is English. It is accurate in England. The English Bill of Rights is a statement of certain freedoms which British Government permits to its subjects.

An American Bill of Rights is the exact reverse of the English one. The "Bill of Rights" in American Constitutions is a statement of the uses of force which American

for which it was hungry. One can hardly reproach the press for dispensing information; one can, however, reproach that press which takes away from people their right to form their own judgments. Is it possible, under modern conditions, to have an educated, intelligent reading public which wants to make use of this right?

The verdict in the Kravchenko case has not been given at this writing; few seem concerned over it. Defamation is, after all, less to be feared than censorship and "controlled" justice.

FRENCH CORRESPONDENT

citizens do not permit to men in American Government.

This difference is of the utmost importance. It is the essence of this World Revolution. This difference is the whole difference between American revolutionary Government and all other Governments in past history or now.

This is the point upon which the whole future of the whole world depends today. And on this point, precisely, depends every American's own personal safety, his liberty, his life. . . . Everything that an American values, his property, his home, his life, his children's future, depends upon his keeping clear in his mind the revolutionary basis of this Republic.

This revolutionary basis is recognition of the fact that human rights are natural rights, born in every human being with his life; not rights and freedoms that can be granted by any power on earth.

The Discovery of Freedom embodies an extraordinary inspiration, or should, for all Americans, and yet it can never, in all probability, serve as much more than a clear and stirring polemic on behalf of economic individualism. The reason for this is that while American thinkers have developed an articulate philosophy of opportunity, they have consistently neglected the problem of responsibility. Most Americans, that is, have neglected it, but there were three great Americans who did not—Edward Bellamy, Henry George, and Eugene Debs. These three men were endowed with rich and generous sympathies for their fellows. Of the three, only Debs—the most recent, in point of time—became alienated from the prevailing social system in the United States. Various explanations for this might be made, but one which now suggests itself is that Debs lived at a time when the abuses of traditional American "freedom" had reached so monstrous a development that he could see no hope from mere "reforms" and set himself to work for an actual revolution as the basis for reconstructing the social institutions of the United States. It is difficult to read a history of the Pullman strike—in, say, Irving Stone's life of Clarence Darrow—without sympathizing with the position Debs finally took.

The Americanism books, which are today mostly aggressive criticisms of the idea of the socialist welfare state, fail to deal with the conditions which have called forth the proletarian revolt. They talk about freedom, passing lightly over the abuses of freedom, as though they did not exist at all, or at least, were of relative unimportance. Contemporary Americanism literature takes no account of the possibility—rather the necessity—of honestly admitting the social injustices and economic oppressions which uncurbed economic individualism has created, without adopting the socialist solution. As a matter of fact, to continue to ignore these abuses—to refuse to take the socialist criticisms seriously—is to invite and in final effect to embrace the socialist solution of an all-powerful, welfare state.

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MANIFEST DESTINY—AGAIN

INASMUCH as the Review section for this week mentions "Americanism" in a tolerant and kindly spirit—at least for several paragraphs—it seems necessary to take notice of a species of "Americanism" for which we have no sympathy at all. Speaking before a gathering of newly elected Democratic Congressmen on April 6, Mr. Truman said:

The welfare of the world is now our responsibility. Whether we like it or not, we have been forced into that position by two world wars, both of which could have been avoided if we had been willing to assume the place which God Almighty intended us to assume back in 1918.

While there is an intriguing side to the question of how, when the first World War broke out in 1914, the taking of the place intended for us by "God" in 1918 could have prevented its occurrence, we are willing to assume that Mr. Truman will have no difficulty in explaining this, provided that he can also give an account of the extraordinary virtues by which American statesmanship has merited the guidance of the Divine Will.

The sentiment is Mr. Truman's, but the idea is far from original with him. It had its origin, according to scholarly research, a little more than a hundred years ago, and became a slogan of American nationalism during the war with Mexico. It was then known as the "Manifest Destiny" of the United States—implying that Providence smiled on all forms of American imperialism.

Fortunately, America has other spokesmen—Dr. Hutchins, for instance. On the same day that the President associated his foreign policy with God and assured his Congressional audience that he would not hesitate to use the atomic bomb again, Dr. Hutchins declared to 3,000 American teachers that our preparations for war "are, in fact, a danger to us, for they continue to convince other nations that we are out to dominate the world." While peace, he said, is necessary to survival, "still more important is the question of what we are going to do with ourselves if we do survive." He continued:

As we now save children from infants' diseases in order to put them into insane asylums when they grow up, so we have cut working hours from 60 to 40 and produced the comic book as the symbol of our cultural epoch.

Of these two American prophets, Mr. Truman and Dr. Hutchins, which has the better understanding of the workings of futurity?

REVIEW—(Continued)

The only possible conclusion from this neglect of all-pervading social injustice by the exponents of "free enterprise" is that they agree, at heart, with the socialists in believing that the acquisitive drive in human behavior cannot be controlled except by some outside force. The *intelligent* way to oppose state socialism would be to suggest some other means of developing social responsibility than control by the government, but this seems never to occur to the "freedom" advocates. Instead, they compose vitriolic attacks on the socialists as though the latter were an inhuman breed bent upon the destruction of everything good in human life. This method in political controversy, of course, is the highest compliment that could be paid to believers in the social theory of the class struggle—for they, too, practice the same sort of attack on the believers in "free enterprise."

America became vulnerable to foreign "isms" precisely because the people of the United States failed to evolve a domestic doctrine of social responsibility. It is a matter of historical fact that during the nineteenth century, except for the "melting pot" area of New York City and a few other regions, European or Marxian socialism penetrated the American culture little or not at all. The class-struggle idea began to take hold in the United States only after the first World War, when irresponsible acquisitiveness became almost the national religion, and the process of alienation, partly anticipated in men like Debs, began to operate on a larger scale in many parts of the country.

The progress of materialistic socialism, in the present epoch, seems to have been interrupted by a kind of historical accident—the forces of European power politics and the candid amorality of the communists, coupled with morbid fears of Americans at home, have brought a mechanical suspension of the trend toward the social welfare state. But unless the advocates of "Americanism" learn to place as high a value on the serious criticisms of our "free" social order as on the principle which they defend in its abstract purity—as though no appreciable fault could be found with the way the principle of freedom has been applied in the United States—they will find themselves caught at the same moral level as their ideological opponents, and exposed as noisy rhetoricians who show neither interest in nor respect for the facts of the social scene.

MANAS is a journal of independent inquiry, concerned with study of the principles which move world society on its present course, and with search for contrasting principles—that may be capable of supporting intelligent idealism under the conditions of life in the twentieth century. **MANAS** is concerned, therefore, with philosophy and with practical psychology, in as direct and simple a manner as its editors and contributors can write. The word "MANAS" comes from a common root suggesting "man" or "the thinker." Editorial articles are unsigned, since **MANAS** wishes to present ideas and viewpoints, not personalities.

The Publishers

CHILDREN ... and Ourselves

"LITTLE SON," he said, rubbing the small tense muscles and tendons behind the child's head, "you have been very angry, and it does not make you feel good, does it?"

"I don't care. Peter wouldn't let me play with them and so I called them names!"

"Are you hungry, son? It's almost lunch time, and there are lots of things you like."

"I don't feel like eating!"

"No, I suspect you don't. I never do when I become angry, either. Son, I would like to show you something. Would you please bring me two glasses of water and a spoonful of dirt. Tell Mother I want to use the spoon. . . . Now, look at this water closely. Does it seem all right to drink?"

"Yes. May I have it?"

"Let me finish showing you this experiment—it's really a very interesting one. You might take just a little sip to make *sure* it's good water, and besides, even a little sip of good water may cool you down a little inside. . . . Now, I shall put some of the dirt in one of the glasses. Would you like to drink it now?"

"It's muddy."

"Of course it is muddy. I have put dirt in it, and I have made it muddy. Now, will you write your name on this bit of paper? See, I shall write mine on one just like it. . . . Why, you made a wrong line in the second letter! How can you spoil my experiment that way! I am very angry! I am so angry I shall kick this chair, like this, and throw down the spoon, like this, and call you a worthless little brat! . . . All right, son. Now you see why I wrote *my* name on the piece of paper, also, because I knew *I* could find a way to become angry myself. . . .

"Now, we shall put a little mud in the second glass, and stick on the paper with my name—and will you stick the paper with your name on it on the first glass? . . . How do you think your glass of water looks, or tastes? Do you want to taste it?"

"No, I don't want even a little taste."

"Have you ever felt the way the water *looks*? . . . Did you feel 'clear' or 'muddy' inside when you came in the house ten minutes ago?"

"Kind of muddy, I guess. Things seemed all different."

"And you weren't even hungry, were you? Things were indeed all different! You cannot *feel* very good after being angry, just as the water cannot look or taste very good after mud has been added. Now, how did the mud get in these glasses?"

"You put it in."

"Yes, that's true. Now, when I became a bit angry when you made the wrong line on your piece of paper, who put that anger in me? Did I have to become angry because you made the wrong line?"

"No; you don't usually when I make a mistake."

"Is that so? Well, I'm very proud of that if this is

true. But this time I just let myself be angry and say and do those things. Now who put the anger in you when Peter told you that you couldn't play with them?"

"He did. He always acts like he is angry with me and that makes me angry."

"Why, son, that sounds to me as if he put mud in *his* glass of water. Did that mean you had to put mud in your glass, too? Are you sure that your feeling bad when you came in wasn't because you had put 'mud' in yourself, more than that Peter put mud in himself? Remember, each person has his own glass of water—which starts out clear and is good to drink. If you mean to keep it that way, you can hold on to it tightly and no one else can put dirt into it—only *you* can. . . . But that has already happened, unfortunately, hasn't it? You put mud in yours because of your losing your temper at Peter and I put mud in mine because I lost my temper at you. What do we do, now, about this? Can we use this water for anything?"

"No. It's spoiled."

"But water is very scarce this summer. Shouldn't we try to manage to use it for something? Let's see—why, it doesn't look quite the same as it did when I first put the dirt in! How does it look to you?"

"It's clearer again! The mud is only in the bottom half of the water."

"Yes, that's because it has been gradually settling while we have been thinking and talking. Yours looks quite good now. Look at it very carefully; hold it up to the light, but don't shake it around at all. It looks clear except for a little at the bottom, doesn't it?"

"Let's pretend that this is all the water there is for us today. It might be like that sometime, and, as I say, we shouldn't waste any. Are you still thirsty? Shall we drink the good part of our water? We must be very *careful* now, not to disturb the mud in the bottom. Go slowly. (I hope Mamacita doesn't see this.) Why, you are doing very well, and so am I. The mud is staying on the bottom and it does taste all right, doesn't it? Oh, look at that! I have shaken mine a little, and now I shall have to wait some more until it settles again! Well, that's the way things are with all of us. We really almost *know* we shouldn't put mud in ourselves by getting angry, or keeping angry, but sometimes we do anyway and that important inside part of us—which some people call the 'soul'—continues to be muddy, and no one can drink from such glasses. . . . Well, at least we haven't put any *more* 'mud' in this time, have we? That would leave even less water which is good to drink. Now, little son, what do you think you should do when you feel yourself getting angry?"

"I guess I should wait and let it settle and not stir it up and not put any more dirt in."

"That sounds very sensible to me. I am sure that I should always want to do the same. Now I think myself that when either of us becomes angry, we should not drink any more water or milk that day, or anything,

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RELIGION

SCIENCE

EDUCATION

FRONTIERS

For Our Greater Security

THE number of young men who have been arrested for refusing to register under the Selective Service Act will soon pass the 100-mark, judging by the rate of arrests and prosecutions during the past few months. Something of the import of these proceedings is conveyed in a "Letter from a Federal Courtroom," sent to us recently by a MANAS contributor after attending the trial of some non-registrants. The "Letter" follows.

* * *

I have just witnessed the sentencing of four young men for refusing to register under the Selective Service Act. Though described in one of the news reports as "draft evaders," there was no doubt, in even the mind of the presiding Judge, that these men were anything other than conscientiously opposed to facilitating the infiltration of the militarist viewpoint into civilian life. If they had registered, they would automatically have been deferred as members of one of the historic peace churches—the Quakers. Their non-cooperation with Registration was the only form of protest they knew how to make. In sentencing them, the judge made the only counter-protest against their action which he knew how to make.

There was tragedy in that courtroom; not simply the tragedy of four young men with highly developed social and religious consciousness being separated from a society sorely in need of such awareness; not simply the tragedy of a judge who knew how to be a genuine humanitarian when dealing with criminals, but who was incapable of transferring this social vision to the problem of political offenders. The tragedy was much deeper than either or both of these circumstances, for it involved the inability of men's minds to encompass the issues created by the confusing social and psychological forces of our time. Both the Judge and the four offenders professed to speak in the name of common ideals. But neither side understood the other. The Judge had been nurtured in one tradition, the four young men in another. They might have belonged to different nations, or had their origins on different planets.

Seven men were involved in the final court proceedings, for the prosecuting and defense attorneys must be included. During the time of their meeting the gracious dignity of the courtroom was a mockery. There was no grace or dignity in the proceedings, even though four men were trading three years of their lives for the conviction that one must have the courage to refuse cooperation with anything regarded as evil. The pacifist tradition seemed, in that context, to be singularly inadequate. The decisions of the four boys may have been adequate for their own personal integrity, but the deci-

sions were expressed in no manner which led to constructive communication. The boys were doing a penance and the Judge was doing his duty. . . . The girl whose tears could not be hidden might have been joyous if she could have seen a sure and clear accomplishment in the occurrence, but the atmosphere was dead. It was just a hopeless situation, for the Judge, for the prosecuting and defense attorneys, for the four new convicts and for the girl.

Behind that confusion and that deadness lay the mental immaturity of Western civilization. From that immaturity came the Judge's amazing statement that these men were like Stalin and Hitler; they had, he claimed, placed themselves "above the law" and were therefore inciters of rebellion against the ideals of democracy. From that immaturity came the defense attorney's inability to create a new context for the issues at stake. The context which he accepted was the context of a society which must have armies because it does not believe in reason, and in that context there was really nothing to say. From that immaturity came the remarks of two of the four boys who only said, in effect, "This is what I must do because of my religion."

The four new convicts *might* have known something more about themselves. They *might* have known and articulated the fact that their position was not a purely personal one—else they would have registered and been deferred in the manner mentioned. They *might* have translated the reasons for their action into a plea for the constitutionality of the principle of conscience regardless of creedal affiliation. They *might* have known and expressed a faith that would not have allowed them to go down without a fight—and no good man should go down without a fight. And they, or someone, should have selected a defense attorney who thoroughly abhorred the principle of conscription.

The Judge *might* have probated these men to the underpaid work of rehabilitation in foreign countries for which they had applied. He *might* have seen that men who were willing to forego deferments and marriage and friendships for the sake of a principle—any principle—were men whose services were sorely needed. But he did not, just as they did not.

The mechanism of the probation officer's report, so widely used in criminal cases, was entirely disregarded. Nothing could have been more favorable than the remarks of a probation report regarding the characteristics of these men. In no other case on the court's docket was the probation report disregarded. In no other case was the Judge at sea.

And so the writer came away from the courtroom with the conviction that nothing any man does just because it is accepted or expected, that nothing any man

FRONTS OF SCIENCE
(Continued)

lowed in quick succession by a score of others like sulfa, penicillin, and now antrycide. There was insulin shock and metrazol shock, brain surgery and the dramatic contributions of modern psychotherapy, such as narco-synthesis. These developments have had the effect of unseating staid theories by making it appear that *anything* is possible. Chemistry and physiology and psychiatry have taken the place of alchemy and astrology, seeming capable of even greater wonders. Formal materialism, when such things are going on, is only a kind of ideological inertia, and not a positive doctrine at all. It is rapidly reverting to the same status as traditional religion, so far as its effect upon the thought of the age is concerned. It is only a habit pattern, no longer a drive.

Looking back over the approximately three hundred years of the history of modern science, it seems evident that the development of the scientific ideology, or so called "philosophy" of science, has been strictly opportunistic and polemical—in no sense an abstract quest after truth—not, at least, in terms of the phases of orthodox opinion through which science has passed.

The earliest scientists of the West dealt with matter and its motions almost exclusively because they had discovered the new tool of Greek mathematics and because they could pursue measurable physical facts with a minimum of persecution by the Roman Church. Then, as science gained prestige, it became the aggressor in the war with theological authority. Today, with that war practically won, and with entirely new problems emerging, philosophical materialism interests only the old guard of scientists. The new blood is working on other fronts. While some of them are building atom bombs, others are studying the world problems of nutrition and food supply. Still others are attacking the human equation at original levels of approach, and coming forth with devastating criticisms of the modern world. Elton Mayo, for one, writes in *Social Problems*:

does because of his *feeling* for State or God, will suffice in this our time. Nor will it suffice to know, alone, what our own personal reasons are. We must know so much that we shall know we are affecting every facet of society with every choice we make. We must know so much that our enemies become entirely impersonal to us, and our only concern the increase of enlightenment. We must know so much that some day we can stand up in such a courtroom and invite the contempt of the court only to gain its respect, when we can courageously rebel and know how to win the rebellion. Sir Galahad was said to have won the Holy Grail because his heart was pure. It is possible that all seven men in the courtroom had pure hearts and ordinarily capable intellects, but there was no sign of the Holy Grail in the Federal Building. An emotional conviction was not enough—neither the feelings of the Judge nor the feelings of any of the others. A partially rationalized conviction would not have been enough. But a thoroughly rational one always is, if we can ever find it in time.

In a modern industrial society we find two symptoms of social disruption. First the number of unhappy individuals increases. Forced back on himself, with no immediate or real social duties, the individual becomes a prey to unhappy and obsessive preoccupations.

Second, . . . it is characteristic of industrial societies that various groups when formed are not eager to cooperate wholeheartedly with other groups. On the contrary, their attitude is usually that of wariness and hostility. It is by this road that a society sinks into a condition of *stasis*—a confused struggle of pressure groups, power blocs, etc.

He adds the observation that the trend of our industrial society is a movement "always in the direction of an ineffective State authority facing a disordered dust of individuals."

Men like Mayo, Fairfield Osborn, John Collier and a number of others are framing a new environment of fact and observation for the scientific imagination of the future to work in. Even while science as technology is operating destructively in countless areas of contemporary society, the new scientific criticism is entering the foreground of informed public interest. This is especially true of some of the social sciences—or, it is probably more accurate to say—of some social scientists. There are sociologists, for example, who are challenging the basic concepts of other branches of research. Last year, C. W. L. Hart, a Canadian sociologist, pointed out the folly of regarding labor as a "commodity." "Labor," he said, "is human, and in its human attributes it possesses qualities which make it impossible to handle within the strict framework of economic theory, and necessitate its being considered within a human or social context, instead of an economic one." The ordinary reader may regard with some bafflement the idea that this statement involves a startling discovery, but it nevertheless represents a truth which has been consistently ignored.

Quite possibly, it would be correct for some purposes to sum up the trend of scientific investigation until about the end of the nineteenth century as essentially divisive and analytical in spirit; while in the fifty years since that time, the tide has been gradually turning in the opposite direction. It is certainly true that whenever analysis reaches the nadir of diminishing returns, the need for synthesis is recognized and discovery strikes out in new directions. Of course, synthesis in physics came first, starting in the days of Copernicus, Kepler, Galileo and Newton. The cycle of analysis has lasted much longer in the life sciences and social sciences, and it should be admitted that conceptions and methods of synthesis are much easier to devise for matter and force—the field of physics—than for life and consciousness.

To put the problem in another way: scientific knowledge begins with description, moves on to "explanation" (at varying levels of causation, from superficial to profound), and then endeavors to achieve prediction and control. The description is analytical; explanation deals with the nature of power; and control results from the exercise of the power.

As the idea of "control" is of the greatest importance in relation to human behavior, this formulation may be illustrated from the history of psychotherapy. If we ignore the differences and disputes among the various

schools of psychoanalysis, it seems evident that the great discovery of men like Freud was the extraordinary influence on human life of what is loosely named "the subconscious"—that aspect of the psyche which affects human behavior without the deliberate intention of the individual. The extensive clinical vocabulary of the psychotherapists comes to us from the epoch of description, during which the psychic traits of human beings were catalogued. Then came the cycle of explanation—of theories of human nature—to account for the dynamics of behavior. This was followed by concepts of "adjustment," which belong to the period of synthesis.

Of course, if the synthesis is incomplete or inadequate, the whole process must begin over again, starting with renewed analysis, followed by attempts at more fundamental explanation, until, finally, genuine synthesis becomes a possibility. We hasten to add that there seems little reason, today, to believe that psychotherapy has reached anything like an understanding of the basic factors of synthesis for mental and emotional well-being. The most far-reaching conclusion, thus far, would appear to be the late Harry Stack Sullivan's theory that self-deprecation is at the root of many of the most knotty psychological problems of modern man. This, at least, provides a starting point for a new philosophy of psychic hygiene, setting the problem in philosophical terms. Evidently, in psychotherapy, the solution of the problem of control—the last step in scientific achieve-

CHILDREN—(Continued)

just to remind ourselves that our anger causes a waste. Would you be willing to do that with me?"

"Yes—and maybe we would get so we were never angry and I wouldn't say things like those I said this morning—they will be mean to me this afternoon because I said all those things."

"Fine. We'll try it. We must be very honest with each other and always admit when we have been a little angry, so that we can help each other by having a very close secret understanding. If you think I have been, I shall ask you, and you must tell me. You know, if we are really able to keep from being angry we shall be doing something few people can do. Many do not even think that it is *possible* to keep from being angry. . . . Well now, I just happened to think that I have had a lot more time to practice not being angry than you have, and we must be very fair about this. When I am angry I shall not drink any water or coffee or milk for *two* days, which is much harder than one day. When you have done so well on the one-day way and catch up to me in having practice against being angry, you tell me, and then we will both promise to make it two days. All right?"

"All right. Were you *really* angry when you kicked the chair? You didn't get red in the face the way you did the last time Grandma came and said those things you didn't like. . . ."

"No, son, this particular time I mostly just wanted to show you something. I was trying to help you along a little, and whenever you do that, it is harder to get angry. You might remember that, too."

ment—lies with the idea of the self, making it no longer a strictly "scientific" problem, but a metaphysical one as well. What, indeed, are the sources of self-respect? Not Freud, it seems to us, but Socrates, had something of an answer to this question.

One more phase of the "development" of modern science needs attention—the phase referred to at the outset as the rapid transformation of scientific discovery into political and military power. The following paragraph is reproduced from an editorial column in *The New Statesman and Nation* (March 19):

Parents who conjure up ogres in bedtime stories may find it difficult to explain to the children who wake up in a nightmare that ogres do not exist after all. The American military have set themselves a similar problem about biological warfare. Three years ago, in the revulsion of feeling after Hiroshima and Nagasaki, the War Department tried to offset it by saying, "You ain't seen nuthin' yet." They released the Merk report on biological warfare to show that others could have ideas just as nasty as the atomic bomb. The Merk report was later withdrawn, but in the meantime there have been plenty of bedtime stories (not without substance) about the horrors of biological warfare. Mr. Forrestal, the retiring Secretary for Defense, is now trying to remove that particular fear from the American mind; the reason, I'm told by those who should know, is that since biological warfare does not involve billions of capital equipment or elaborate technological know-how, it can be devised by any country which has bacteriologists and chemists with sufficient devilish ingenuity. In short it is because the horror may be real, and not good publicity for the United States, that Mr. Forrestal dwells on it. To comfort Americans who may be kept awake at night, he said: "There is no direct comparison. The atomic bomb destroys not only life, but buildings and other physical structures, and also there is atomic radiation in contaminated areas. Biological warfare agents affect only living matter." The more one ponders this remark, the more appalling the thought that our destinies may be in the hands of such men as Mr. Forrestal.

This is "synthesis" at another level—the level which Kingsley Martin calls "devilish ingenuity"—being used to cement the psychic unity of the modern War State. Unless social scientists are preparing themselves to attack problems of this sort and to discuss them widely and openly, not just among themselves, but in all the forums of public discussion that are available, large and small, across the country—as, for example, Thomas Huxley did, in the interest of popular scientific education, with his address about "A Piece of Chalk"—they might as well stop taking themselves seriously, and adopt some really constructive pursuit like bricklaying or carpentry. Until this happens, Science, considered as a vast international institution, will be as unforgivably two-faced as the similar institutions of organized religion have been known to be for centuries.

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